



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,163	09/15/2003	Steven M. Bennett	42P15752	2836
45209	7590	05/11/2009	EXAMINER	
INTEL/BSTZ			TO, JENNIFER N	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP			ART UNIT	
1279 OAKMEAD PARKWAY			PAPER NUMBER	
SUNNYVALE, CA 94085-4040			2195	
			MAIL DATE	DELIVERY MODE
			05/11/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/663,163

Applicant(s)

BENNETT ET AL.

Examiner

JENNIFER N. TO

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-9,11-17,19,22-26,30,31,33-35,37-39,41,43-46,50,51,53 and 56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9,11-17,19,22-26,30,31,33-35,37-39,41,43-46,50,51,53 and 56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-2, 5-9, 11-17, 19, 22-26, 30-31, 33-35, 37-39, 41, 43-46, 50-51, 53, and 56 are pending for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 5-9, 11-17, 19, 22-26, 30-31, 33-35, 37-39, 41, 43-46, 50-51, 53, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al (hereafter Robinson) (U.S. Patent No. 5522075), and in view of Shorter (U.S. Patent No. 5063500).

4. Robinson and Shorter were cited in the previous office action.

5. As per claim 1, Robinson teaches the invention substantially as claim including a method comprising:

receiving an instruction executed by a virtual machine monitor (VMM) (col. 5, line 21; col. 12, lines 34-60);

identifying based on the instruction that a transition from the VMM to one or more virtual machines (VMs) is about to occur (col. 5, lines 21-27; col. 12, lines 34-60); and

utilizing processor-managed resources associated with the one or more VMs based the transition (col. 10, line 54 through col. 11, line 39).

6. Robinson did not specifically teach that the transition is an initial transition.
7. However, Shorter teaches that the transition from the VMM to one or more VMs is an initial transition (col. 14, lines 47-66).
8. It would have been obvious to one of an ordinary skill in the art at the time the invention was made to have combined the teaching of Robinson and Shorter's system because both systems suggest transition from a VMM to one or more VMs is occurred in response to a instruction and Shorter also suggested that the transition is an initial transition would improve the integrity of Robinson's system by avoiding the assignment of a VM from the pool to a conversation request involving a program thread that is dependent on the successful execution of a previous thread (col. 5, lines 10-14).
9. As per claim 2, Shorter teaches that wherein the initial transition from the VMM to the one or more VMs is a first time invocation of a VM (abstract; col. 5, lines 36-56).
10. As per claim 5, Shorter teaches that wherein the instruction executed by the VMM is VM launch instruction (col. 10, lines 39-55; col. 11, lines 9-15).

11. As per claim 6, Shorter teaches that wherein identifying the initial transition comprises determining initial transition is about to occur by logic within a processor (abstract; col. 5, lines 36-55).

12. As per claim 7, Shorter teaches that wherein the logic within the processor is prediction logic (abstract; col. 5, lines 36-55).

13. As per claim 8, Shorter teaches that wherein utilization of processor-managed resources includes at least one of allocation of one or more processor-managed resources, de-allocation of one or more processor-managed resources, verification of data stored in one or more processor-managed resources, invalidation of data stored in one or more processor-managed resources, and loading of data into one or more processor-managed resources (abstract; col. 8, line 67 through col. 9, line 6).

14. As per claim 9, it is rejected for the same reason as claim 1 above. In addition, Shorter teaches notifying the processor of the initial transition (col. 14, lines 59-66).

15. As per claim 11, Shorter teaches that wherein the initial transition is an initial transfer to the VM (col. 14, lines 47-66).

16. As per claim 12, Shorter teaches allocating a memory region for a new virtual machine control structure (VMCS) associated with the VM, and requesting the processor to activate the new VMCS (col. 11, line 66 through col. 12, lines 22).

17. As per claim 13, Shorter teaches that wherein requesting the processor to activate the new VMCS comprises executing a VMCS pointer load instruction including a pointer to the new VMCS as an operand (col. 12, line 66 through col. 13, line 11).

18. As per claim 14, Shorter teaches that requesting the processor to initialize the new VMCS (col. 11, lines 9-18).

19. As per claim 15, Shorter teaches that wherein requesting the processor to initialize the new VMCS comprises executing a VMCS clear instruction including the pointer to the new VMCS as an operand (col. 8, line 59 through col. 9, line 26; col. 13, lines 12-20).

20. As per claim 16, Shorter teaches upon requesting the processor to activate the new VMCS, requesting the processor to set execution control information, VMM state information and VM state information in the new VMCS (col. 11, lines 9-18).

21. As per claim 17, Shorter teaches that wherein requesting the processor to set execution control information, VMM state information and VM state information in the new VMCS comprises executing a VMCS write instruction having an operand that identifies a component of the new VMCS to which data is to be written (figs 6A-6B, 7; col. 11, lines 9-18).

22. As per claims 19, 22-26, 30-31, 33-35, 37-39, 41, 43-46, 50-51, 53, and 56, they are rejected for the same reason as claims 1-2, 5-9, and 11-17 above.

Response to Arguments

23. Applicant's arguments with respect to claims 1-2, 5-9, 11-17, 19, 22-26, 30-31, 33-35, 37-39, 41, 43-46, 50-51, 53, and 56 have been considered but are not persuasive.

24. In the remark applicant argued that the combined Robinson and Shorter fail to teach (1) identifying, based on an instruction executed by a VMM, that an initial transition from the VMM to one or more virtual machines (VMs) is about to occur; (2) identifying, based on an instruction, that an initial transition from the VMM to one or more virtual machines (VMs) is about to occur.

25. Examiner respectfully disagreed with applicant argument.

As to point (1), applicant argued that the combined Robinson and Shorter fail to teach the step of "identifying, based on an instruction executed by a VMM, that an initial transition from the VMM to one or more virtual machines (VMs) is about to occur". However, examiner unable to find such limitation recited in the claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). At best, the claims recited "identifying, based on an instruction, that an initial transition from the VMM to one or more virtual machines (VMs) is about to occur". Examiner suggested applicant to recite the new limitation as argued into the claims in order for examiner to consider. In addition, examiner remind applicant to review the specification to verify whether the new limitation is support by the original specification to avoid introducing new subject matter into the claims.

As to point (2), Robinson disclosed the use of VM bit to determine whether the processor is executing a process in the VM or the VMM (abstract), and when processor receives an instruction, it determines based on the instruction (identifying based on an instruction) whether it is in a proper mode to execute that instruction, if not it transfer the control to other process to handle (col. 5, lines 21-27), and the VMM only handle the sensitive instruction (col. 12, lines 50-51). Thus when processor is in VMM mode and it receives an instruction, classify the instruction to identify what type of instruction, if it is not a sensitive instruction, then the transition between the VMM and VM is about to occur. Therefore, Robinson teaches identifying a transition from a VMM to a VM about to occur based on the instruction. Although Robinson did not teach that the transition is an initial transition. However, Shorter teaches that the transition from the VMM to one or more VMs is an initial transition (col. 14, lines 47-66). It would have been obvious to one of an ordinary skill in the art at the time the invention was made to have combined the teaching of Robinson and Shorter's system because both systems suggest transition from a VMM to one or more VMs is occurred in response to a instruction and Shorter also suggested that the transition is an initial transition would improve the integrity of Robinson's system by avoiding the assignment of a VM from the pool to a conversation request involving a program thread that is dependent on the successful execution of a previous thread (col. 5, lines 10-14). Thus the combined of Robinson and Shorter's system teach identifying, based on an instruction, that an initial transition from the VMM to one or more virtual machines (VMs) is about to occur.

Conclusion

26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER N. TO whose telephone number is (571)272-7212. The examiner can normally be reached on M-T 6AM- 3:30 PM, F 6AM- 2:30 PM.

28. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

29. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VAN H NGUYEN/
Primary Examiner, Art Unit 2194

/Jennifer N. To/
Patent Examiner
AU 2195